The Secretaries now edit the 'Transactions' and the 'Proceedings' which are found so useful by the Fellows, and this latter duty has added considerably to their labour.

"The current revenue of the Society may be set down at about 3,514*l.* of which 1,150*l.* are derived from rents and dividends, and 517*l.* from the Stevenson bequest. The latter sum, it is known, will increase as lives fall in. The annual subscriptions amount to 1,126*l.*; the entry fees, estimated on an average of eleven years, will be about 170*l.*; the compositions 360*l.*; the Transactions will yield 276*l.*; making the aggregate revenue under these heads 1,932*l.* Your Committee see no reason to believe that these sources of income are likely to fail.

"The current annual expenditure may be stated at about 2,839*l.*; namely, 1,177*l.* on printing; 764*l.* on gratuities, salaries and wages; 187*l.* on books and binding; 511*l.* on house expenses; 200*l.* on Catalogue of Periodicals. These items necessarily fluctuate, and the printing bill last year exceeded considerably the above amount; but the amount just stated for printing is estimated from an average of the last eleven years. The income of the Society has thus for some years exceeded the expenditure by about 675*l.*

"Looking at the duties which now devolve upon the Secretaries, of regularly attending Meetings, reading papers, editing the 'Transactions,' preparing the 'Proceedings' for publication, and other work,—looking also at the remuneration which it is found desirable to give gentlemen who discharge less onerous duties merely as editors of literary works in the present day,—your Committee are of opinion that the Council will be acting quite in conformity with the sound principles which were laid down in Sir Isaac Newton's presidency, and have been acted on since, by increasing the gratuity to each of the two Secretaries. As the result of the inquiries made by your Committee, they would suggest that the addition should be 95*l.*, raising each gratuity from 105*l.* to 200*l.* This would involve an increase of 190*l.* in the expenditure.

"The relations of the Society with foreign countries may be largely extended, and your Committee are of opinion that to accomplish this object 80*l.* may be advantageously added to the 20*l.* now voted making the annual gratuity of the Foreign Secretary 100*l.*

"The total augmentation of the expenditure under this arrangement would be 270*l.* leaving a probable annual surplus of 400*l.* to be devoted to the numerous purposes which fall naturally within the scope of the Society's inquiries.

"Your Committee are of the opinion that the offices efficiently discharged will still be to a great extent honorary; and that so long as the Society itself is so fortunate as to have able, industrious, and eminent men as its Secretaries it will be still largely in their debt.

"Should the finances of the Society, through any unforeseen circumstance, require it, there would not, your Committee apprehend, be any difficulty in again revising the scale of gratuities which may be awarded."

This Report having been read, it was, on the motion of the Treasurer, seconded by Sir R. Murchison,

"Resolved—That the recommendation of the Committee respecting the honorarium to be given to the two principal Secretaries be adopted."

June 20, 1872.—On the motion of Dr. Sharpey, pursuant to notice given, seconded by Mr. Spottiswoode—

"Resolved—That the following mode of procedure be adopted in the nomination of Fellows to be recommended to the Society for election as Council and Officers.

"1. The subject of the new Council shall be taken into consideration at a meeting of Council to be held on the last Thursday of October; and with the summons for that meeting there shall be transmitted a list of the members of the existing Council, with the number of their attendances at meetings up to that date; also a list of the Fellows of the Society, with an indication of those who have at any time served on the Council, and the dates of their service.

"2. At this meeting the names of those members of the existing Council who retire at the ensuing anniversary shall be determined. Thereafter each member present shall hand to one of the secretaries a list of not exceeding ten Fellows whom he proposes for the new Council, of whom five shall not have already served on the Council. Members not able to be present may send in similar lists previous to the meeting. The several lists of names so proposed shall then be read out by the secretary.

"3. Before the next following meeting, the president and officers shall prepare a list of twenty-one names for consideration by the Council, which list shall include ten names selected from those proposed at the previous meeting, or other names, if required to make up that number. The list so prepared, together with a statement of the names proposed and the number of votes given for each, shall be sent out confidentially with the summons for the ensuing meeting, at which meeting the names to be finally recommended shall be balloted for. In taking the ballot, a copy of the list prepared by the officers, with such alterations as he may see fit to make therein, shall be delivered by each member of the Council present and voting, and the names found to have the majority of votes shall form the list to be recommended to the Society.

"The President and Council shall then nominate by ballot, out of the proposed Council, the persons whom they recommend to the Society for election to the offices of President, Treasurer, Principal Secretaries, and Foreign Secretary for the ensuing year."

NOTES

THE present year is already remarkable for the number of eminent scientific men who have gone over to the majority: and now, just a its close, one of the most eminent in his own sphere has taken his departure. A telegram dated New York, December 14, announces the death of Prof. Louis J. R. Agassiz, in his 67th year, he having been born in Switzerland in 1807. We shall content ourselves with the bare announcement at present, hoping to be able to give, next week, a memoir of the great naturalist. Meantime we would draw the attention of our readers to the interesting letter from Agassiz in our correspondence column, sent us by Sir Philip de Malpas Grey-Egerton, Bart.

A MEETING, with Sir William Armstrong as chairman, was held at Newcastle last Thursday, to consider the question of a memorial to the late Mr. Albany Hancock. It was unanimously resolved that the most appropriate memorial that could be raised to Mr. Hancock, would be a Professorship of Natural History in the Newcastle College of Physical Science, to be called, after him and his friend and conjoint worker, the late Mr. Alder, the "Hancock and Alder Professorship." Over 1,000*l.* were subscribed at the meeting, and we have reason to hope, from the general esteem in which the two men were held, the high value of their labours, and the great wealth of Newcastle and the surrounding district, that the remaining 4,000*l.* or 5,000*l.* necessary to endow a Natural History chair, will be raised without difficulty. Very few, even of scientific men, seem to be aware of the great amount and value of the work done by Mr. Hancock. The Rev. A. M. Norman, in speaking at the meeting, said that the nature and extent of the work done by Mr. Hancock, would only be realised by degrees. "His work was abstruse science; work which was labour, day by day, under the microscope; work which was carried on from week to week and from year to year, and which was published in the journals of the scientific associations; work which was at present not thoroughly understood even by scientific men, and which could only be fully appreciated and utilised years afterwards, when others should arise who devoted themselves to the same branches of science as Mr. Hancock had done."

The Professorship of Zoology in the Royal College of Science, Dublin, has become vacant through the appointment of Prof. Traquair to the Keepership of the Natural History collections in the Museum of Science and Art, Edinburgh. Candidates for the appointment should apply, forwarding testimonials, to the secretary, Science and Art Department, South Kensington, S.W.

On April 14 and following days, an Exhibition in Natural Science will be offered for competition, in connection with King's College, Cambridge. Candidates must be British subjects under twenty years of age, unless already undergraduates of the College, who are also eligible, if in their first or second year. The Exhibition is worth at least 80*l.* a year, and is tenable for three years, but not with any other Exhibition, Scholarship, or Fellowship. There will be three papers in Natural Science (including Chemistry, Physics, and Physiology), and papers in Elementary Classics and Mathematics.

Ninety-four essays have been sent in in competition for the 100*l.* prize offered by Lord Cathcart, the president of the Royal Agricultural Society, for the best essay on the potato disease and its prevention; but the committee appointed by the council of the society to adjudicate the prize do not advise its being awarded to any of the competitors. They recommended, however, that a sum of money be granted for the purpose of inducing a competent mycologist to undertake the investigation of the life-history of the potato-fungus, *Peronospora infestans*, in the interval between the injury to the potato plant and the re-appearance of the fungus in the following year; and that the society should offer prizes for kinds of potatoes that would resist disease during a series of experiments to be continued for three successive years.

A correspondent sends us a letter from Dr. A. B. Meyer in which the latter asserts that D'Albertis did not cross New Guinea at all, and that he himself is the only explorer who has done so. With regard to his statement that the fauna of New Guinea is not rich, he says he refers to the higher vertebrates; he intends to publish shortly a "Prodromus Faunæ Novæ Guinensis." The latitude of the point on MacCluer Gulf, at which he arrived in crossing, was 2° 38′, and not 20° 38′, as by an obvious misprint was stated in his article in vol. ix. p. 79 of Nature.

A peculiar result has been arrived at by Professor Fick, of Würtzburg, in his experiments on the blood-pressure in the heart and aorta of the dog (Verhandl. d. physik. med., vol. iv. p. 223). He finds that if a straight tube is the manometer employed, the column of fluid rises higher when the lower end is in the aorta, than when in the left ventricle itself. There are several objections to the method adopted which might tend to the production of this extraordinary result, so contrary to all preconceivd notions and to the experience of M. Marey, who, when discussing the subject (Circ. du Sang., p. 192) remarks, "Frequently verified measurements, made by the employment of ampoules on the horse, show that the maximum pressure in the aorta is slightly more feeble than in the ventricle, though, in some cases, it is nearly the same." May it not be that the presence of the tube in the ventricle, and the associated imperfect closure of the semilunar valves, reduces the pressure in the one case, and that on its withdrawal into the aorta the heart again resumes its more vigorous action. It seems physically impossible that the aortic pressure should be greater than the ventricular during any portion of the systolic period in which the semilunar valves are open.

A valuable contribution to anatomical science, by Prof. Turner, has appeared in the current number of the *Journal of Anatomy and Physiology*, in which the relations of the different cerebral convolutions to the parts of the brain-case with which they are in contact are discussed. Each lateral half of the scalp is divided with the aid of the best marked prominences and sutures as landmarks, into ten regions, which are again capable of further subdivision, and the convolutions found in each are stated. It is shown that the lobes of the brain by no means correspond exactly with the bones from which they have been named, but frequently extend under the cover of others, or only partially occupy the surfaces of their own. These observations are particularly valuable now that the subject of the localisation of the cerebral functions has attained such prominent importance.

Captain Potter of the U.S. whaler *Glacier*, we learn from *La Nature*, says that he has discovered some relics of the Franklin Expedition in the Polar regions. Captain Potter left New Bedford, Mass., on July 19, 1871, and remained absent twenty-six months, most of which time he spent in the neighbourhood of the place where Franklin and his companions abandoned their vessels. At Repulse Bay a party of Esquimaux came to trade with Captain Potter. He was considerably surprised to see them offering in exchange for culinary utensils, part of a table-service of silver, which they declared belonged to the appointments of Franklin. There are two large tablespoons, two large four-pronged forks, an ordinary tea-spoon, and sugar-spoon. All these articles are of old-fashioned make. The natives assert that after having quitted their ships, Sir John and his companions separated into two bands, one of which took the direction of the Red River, and the other made for the territory of the Hudson's Bay Company. They say also that Sir John and his companions died solely from natural causes, and Captain Potter believes they speak the truth.

The adult female Indian Rhinoceros, which has been in the Zoological Society's Gardens since July 1850, then not larger than a full sized dog, died on Sunday last, having been ill for some time previously. The coldness of the weather and the fog were probably the exciting causes of its death, though no definite pathological changes have been found on *post-mortem* examination. There were no symptoms of senile decay. An interesting point may be mentioned, which is, that one of the wisdom teeth from the lower jaw was found in the cæcum, with the fangs and dentine entirely absorbed. This tooth must have been in this peculiar situation for some time, probably years, as it is almost unworn, whilst the corresponding molar on the opposite side is still in place, much worn, as is the same one in the maxilla of the same side; that opposite to the proper situation of the missing tooth being almost as complete as when it was cut. The large accumulation of hay in the cæcum, in which the tooth was embedded, appeared fresh and but little modified by the digestive process, so that it must have been there but a short time. In a Sumatran Rhinoceros, also, which died some time ago, two large beans were found in the cæcum, which could not have been introduced in the food for at least four or five months before the individual's decease.

We have received a Catalogue of Apparatus suitable for Lectures and Class Instruction in, Subject VIII. Acoustics, Light, Heat, and IX. Magnetism and Electricity, in connection with the Science and Art Department. The object of the Catalogue, which contains the names of 141 different pieces of apparatus, is to show those articles on which the Department allows a discount of 50 per cent. It is of great importance that this Catalogue should become widely known, and we hope the facilities here offered for the acquisition of serviceable apparatus will be extensively taken advantage of.

THE fourth number of the circulars of the U.S. Bureau of Education for 1873 contains a list of publications by the members of certain college faculties and institutions of learning in the United States from 1867 to 1873, and constitutes quite a valuable record of scientific activity during that time. We hope the Bureau will continue such a publication yearly, and we only wish there was any prospect of a similar undertaking in our own country.

WE would draw attention to the efforts being made by the Directors of the London Polytechnic Institution to give a scientific character to part of the entertainment which they provide for the public. Mr. E. V. Gardner is at present delivering the seventh and eighth of a series of lectures descriptive of "Inventions and Appliances Useful or Necessary to Everyday Life," the subjects being "Sugar: from the Cane to the Teacup," and "The Silber Light and Lightning." We wish the Directors of the Polytechnic success in this attempt to make their institution administer to instruction as well as amusement.

MR. J. D. PAINTER of Macclesfield sends us some very interesting ornithological notes relative to East Cheshire. A short time ago, a bird which had been hovering round the Grammar School for six weeks, was brought him; it had evidently been killed by a violent blow with either a stick or a stone. Upon examination it proved to be the Crested Lark (*Alauda cristata*), which is a common bird throughout the Continent of Europe, but not a native of Britain. Indeed, it is a very rare visitor, since only two or three instances are on record of its having been met with in this country. Occasionally, the neighbourhood of Macclesfield is resorted to by other strangers of the feathered tribe. Some few weeks since the Black-headed Gull (*Larus ridibundus*) was shot in Swithamley Park, and previous to that, on the same estate, the Common Buzzard (*Buteo vulgaris*) had been shot upon the Roaches. A few years further back the Roller (*Coracius garrula*), and a Hobby were killed two or three miles south of the town. In tempestuous weather the Stormy Petrel or Mother Carey's Chicken has been frequently picked up either dead or in an exhausted condition near Macclesfield: and Terns are occasionally shot. The Siskin is a winter visitor, some become victims to the bird-catchers, and the Brambling, also a winter visitor, is now and then shot or snared. Twenty-five years ago, that delightful songster the Woodlark bred about Gawsworth, but in like manner it became completely extinguished. The Grey or Wild Goose (*Anser ferus*) and the Curlew (*Numenius arquata*) came almost every year to breed on Danes Moss, but when the North Staffordshire Railway was carried across it these birds deserted it. Last year, however, the Curlew returned and nested, but some boys took the eggs when just upon the point of being hatched; and this year the birds have not been seen in the neighbourhood. A few Woodlarks have likewise returned lately, and they will most probably share the same fate as their predecessors, unless the forthcoming amended Birds' Act be extended to them and also to the Skylark, which have been most unaccountably omitted in the Act now in force. A few years ago Mr. Painter gave a lecture at the Town Hall upon the Geology, Archæology, Botany, Ornithology, and Zoology of Danes Moss and its borders, when he mentioned some rare and beautiful bog plants. &c. that grew upon it. In the course of a year or two nearly the whole of them were rooted up and carried away, chiefly by strangers.

THE additions to the Zoological Society's Gardens during the last week include a Zebu (*Bos indicus*) born in the Menagerie; a Greater White crested Cockatoo (*Cacatua cristata*) from Moluccas, presented by Mr. T. Towndrow; a Squirrel Monkey (*Saimaris sciurea*) from Guiana, presented by Mrs. Paget; a Parrot Crossbill (*Loxia pityopsittacus*) and two common Crossbills (*L. curvirostra*), European, purchased.

EFFECTS OF ALCOHOL ON WARM-BLOODED ANIMALS *

AFTER referring to what had already been done in reference to this subject, Prof. Binz gave an account of his and his pupils' researches during the last years. They concerned especially two points (1) the influence of alcohol on the temperature of the blood, and (2) the causes of this influence.

As in every powerful attack on our organism, so also in the case of alcohol, the questions arise—In what quantities it worked? and whether the organism to be experimented on was previously accustomed to its influence or not? Taking into exact consideration these two points, so often disregarded, the answer is as follows:—The pretended heat of the organism does not exist. The subjective impression is, at least partially, the consequence of an irritation of the nerves of the stomach and of the enlargement of the vessels arising in the skin. When given in small doses the thermometer shows no extraordinary increase or decrease of the temperature of the blood. Moderate doses, which lead by no means to drunkenness, show a distinct decrease of about half-an-hour duration or more; and inebriating quantities evince a still more decided lowering of 3 to 5 F., which lasts several hours. The decrease in the temperature after moderate doses takes place most successfully in warm-blooded animals, which have had for some time previously no alcohol administered. When inured to it, the organism does not answer on such doses by any measurable cooling or by the reverse.

Good results are yielded more easily by a feverish than by a healthy animal. For these experiments strong guinea-pigs, rabbits, or dogs of the same origin and of the same quality have been used. Under their skin some cubic-centimeter of ichor or putrifying blood was injected. After thus proceeding, the temperature of the animal rises several degrees, and all the symptoms appear which are to be observed in human beings suffering from putrid fever. If the quality of the poisonous substance be right, the animal expires in a few days. Not so, however, if, simultaneously with the ichor, alcohol diluted with water is administered. The temperature then remains lower from the beginning, and the one animal may be seen to die, whilst the other runs about. The analysis of these experiments shows a threefold action of alcohol in putrid fever—(1) the diminution of the heat; (2) reduction of the putrid processes; and (3) rising of the action of the nerves and of the heart.

Prof. Binz then remarked on the causes of such antipyretic action of alcohol. He pointed out several possibilities which here may concur, and has proved by a series of experiments that two of them really take place. It is the action of the heart, together with the enlargement of the vessels of the skin, which allow a stronger evolving of the blood at the surface of the body, and then the moderating influence of alcohol on the chemical metamorphosis of tissues. All these results seem to be suggestive for the use and abuse of alcohol in social life as well as in illnesses, and they explain a great many empiric observations in both departments. The paper of Prof. Binz will be published at length in one of the next numbers of *Humphrey's Journal of Anatomy and Physiology*.

Dr. Brunton remarked that the performance of the vital functions depended on oxidation of the tissues, and Professor Binz's observation that this was lessened by alcohol was the key to an explanation of its physiological effects. These may be nearly all explained on the supposition that the power of the nervous system is diminished, different parts of it becoming successively paralysed. First, the vasomotor nerves become affected and the blood-nerves consequently dilated. After a glass or two of wine, the hands may be noticed to be of a very red colour and plump, showing that arterial blood is flowing freely through the capillaries, and at the same time the veins are dilated and full. All the vessels of the body, however, are not dilated at the same time. In some persons those of the stomach or intestines become dilated, and the blood being thus abstracted from the head the brain becomes anæmic, and the individual dull and sleepy. In others the arteries of the head become dilated first, and in consequence the brain receives a full supply of blood, and the intellect becomes more vigorous. If this stage is not passed the functions return to their normal condition, and no harm ensues, but if more alcohol is taken the paralyis extends to other parts of the nervous system. Sometimes the cerebral lobes, which are the organs of the mental faculties, are first affected, and some-

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* Abstract of paper read at the British Association, Bradford, by Prof. Binz, of Bonn, with Dr. Brunton's remarks.